

UNCLASSIFIED

EXHIBIT R-2, FY 2000 RDT&E,N BUDGET ITEM JUSTIFICATION SHEETDATE:

February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0718 Marine Air Traffic Control and Landing Systems (MATCALs)	1,440	894	4,704	3,638	5,404	2,787	1,322	1,259	CONT.	CONT.
W0993 Carrier Air Traffic Control	5,508	1,204	1,795	1,843	1,878	1,917	1,966	2,012	CONT.	CONT.
W1657 Air Traffic Control (ATC) Improvements	1,684	1,887	2,197	2,414	2,479	2,542	2,609	2,671	CONT.	CONT.
W2643 ECARS	0	3,492	0	0	0	0	0	0	CONT.	CONT.
TOTAL	8,632	7,477	8,696	7,895	9,761	7,246	5,897	5,942	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program element provides for the development, integration, and testing of automated Air Traffic Control (ATC) hardware and software required to provide improved flight safety and more reliable all-weather ATC and landing capabilities ashore and afloat. Funded programs are required to upgrade or replace aging ATC and approach/landing equipment on aircraft, aircraft carriers, amphibious ships, Naval Air Stations, and Navy/Marine Corps tactical/expeditionary airfields and remote landing sites. Development of a Global Positioning System (GPS) data link is required to enable the transfer of precise positioning information between ships and aircraft. This program is funded under ENGINEERING & MANUFACTURING DEVELOPMENT because it encompasses engineering and manufacturing development of new end-items prior to production approval decision.

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0718

PROGRAM ELEMENT TITLE: Air Control (Eng)

PROJECT TITLE: Marine Air Traffic Control and Landing System (MATCALs)

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0718 Marine Air Traffic Control and Landing System (MATCALs)										
	1,440	894	4,704	3,638	5,404	2,787	1,322	1,259	Cont.	Cont.
TOTAL	1,440	894	4,704	3,638	5,404	2,787	1,322	1,259		

Quantity of RDT&E Articles Not applicable.

(U) (U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for continued development, integration, and testing of hardware and software to meet requirements for all-weather operation and improved flight safety of Air Traffic Control and Landing System (ATCALs) at Navy/Marine Corps (MC) expeditionary airfields. This program transferred to COMNAVAIRSYSCOM P.E. 0604504N, Project W0718 in November 1996 (FY 97).

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$304K) Investigated software upgrades required for automatic FAA interface for the hand-off of flight data from MATCALs to the FAA. Determined possibility of using Information Technology 21st Century (IT21) technology to integrate/incorporate this capability into MATCALs.
- (U) (\$160K) Developed Version M operational software to correct deficiencies/problems documented by the Fleet Marine Forces (FMF) during Operation Desert Storm, to include ensuring integration with Tactical Digital Information Link (TADIL) B/C systems.
- (U) (\$365K) Initiated studies and investigations to determine sensor, display, and equipment requirements (range, altitude, sensitivity, volume) for Next Generation Marine Air Traffic Control (ATC). Provided review of and input to Operational Requirements Document (ORD).
- (U) (\$374K) Supported the program office in concept development and analysis of alternatives for Next Generation Marine ATC.

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PROGRAM ELEMENT: 0604504N

PROGRAM ELEMENT TITLE: Air Control (Eng)

PROJECT NUMBER: W0718

**PROJECT TITLE: Marine Air Traffic Control and
Landing System (MATCALS)**

- (U) (\$130K) Researched on-going efforts within FAA to develop next-generation Flight Data Input/Output and Flight Progress system. Determined specific hardware/software requirements needed for interconnectivity to the MATCALS Flight Progress Data/Strip system.
- (U) (\$107K) Determined if NAVAIRSYSCOM, Commandant Marine Corps (CMC), Air Combat Element (ACE), Strike Aircraft Division, or other military command elements are necessary for individual-item FAA flight check certification. Developed a comprehensive certification procedure.

2. (U) FY 1999 PLAN:

- (U) (\$376K) Conduct research, investigations, studies/analyses incident to refining requirements of MATCALS Next Generation System for compatibility and interoperability with Common Aviation Command & Control System (CAC2S) and common usage with Navy/Marine Corps (MC) ATC to include: (1) hardware/software requirements and solutions needed to incorporate precision Approach Mode II capability, MC intelligence networks, Cooperative Engagement Capability, and Defense Intelligence Information (DII)/Common Operating Environment (COE)/Information Technology 21st Century (IT21); (2) sensor requirements for both airport surveillance and precision approach; and (3) upgrades to existing displays.
- (U) (\$158K) Provide software corrections to Operational and Precision Approach Software. Develop and field software upgrades. Provide documentation for software version releases.
- (U) (\$346K) Provide technical/management program office support in development and test of new MATCALS ATC system and software Independent Validation & Verification (IV&V).
- (U) (\$14K) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2000 PLAN:

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- (U) (\$2373K) Provide test and evaluation in support of Next Generation Marine ATC for: (1) software corrections for identified problems; (2) integration of systems and subsystems.
- (U) (\$1081K) Provide studies/analyses, systems integration, and test and evaluation support to incorporate Cooperative Engagement Capability, MC Intelligence Networks and Precision Approach Mode II Capability into MC ATC Next Generation System.
- (U) (\$718K) Initiate test and evaluation of new software and hardware development and upgrades (sensors, displays, DII/COE/IT21) for Next Generation System.

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PROGRAM ELEMENT: 0604504N

PROGRAM ELEMENT TITLE: Air Control (Eng)

PROJECT NUMBER: W0718

**PROJECT TITLE: Marine Air Traffic Control and
Landing System (MATCALs)**

- (U) (\$370K) Continue technical/management program office support in development and test of new MATCALs ATC system and software IV&V.
- (U) (\$162K) Provide software corrections to Operational and Precision Approach Software. Develop and field software upgrades. Provide documentation for software version releases.

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DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROGRAM ELEMENT TITLE: Air Control (Eng)

PROJECT NUMBER: W0718

**PROJECT TITLE: Marine Air Traffic Control and
Landing System (MATCALs)**

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	1,175	1,045	1,058
(U) Appropriated Value:	1,175	1,045	
(U) Adjustments from Pres Budget:	+265	-151	+3,646
(U) FY 2000/2001 DON Budget Submit:	1,440	894	4,704

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY98 net increase (\$265 thousand) is due to: a \$300 thousand increase reprogrammed from within the program element to continue FAA Hand-off and Flight Check Certification development for MATCALs; a \$19 thousand decrease for the Small Business Innovation Research Assessment (SBIR) and a \$16 thousand decrease for minor program adjustments. FY99 decrease of \$151 thousand is due to Congressional undistributed reductions. FY00 net increase of \$3,646 thousand is due to a \$3726 thousand increase for studies, analyses, test and evaluation associated with migration of MATCALs to the Next Generation. This increase is partially offset by a decrease of \$80 thousand for pricing adjustments.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

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BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0718

PROGRAM ELEMENT TITLE: Air Control (Eng)

PROJECT TITLE: Marine Air Traffic Control and

Landing System (MATCALs)

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>
(U) OPN MATCALs-BLI 281500	4,788	12,582	12,412	12,034	14,836	17,661	19,525	19,957	Cont.

Related RDT&E: Not applicable.

(U) D. ACQUISITION STRATEGY: Not Applicable.

(U) E. SCHEDULE PROFILE

<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>To Complete</u>
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(U) Program Milestones: Not applicable.

(U) Engineering Milestones:

4Q Complete Software (SW) Improvements (Current)	3Q Complete DII/COE/IT21 Analysis
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(U) T&E Milestones:

1Q T&E of SW Improve- ments (Current)	1Q-4Q T&E of Hardware (HW)/SW (Next Gen)
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(U) Contract Milestones: Not applicable.

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0718
PROJECT TITLE: Marine Air Traffic Control
and Landing System (MATCALs)

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Product Development	Various	Various	979	158		162		Cont.		
Subtotal Project Development			979	158		162		Cont.		
Remarks: Prior Years includes FY 97 and FY 98 data; program transferred from SPAWAR in FY 97, therefore earlier data is not available.										
Next Generation Studies	Various	NAWCAD	776	376		1,081				
ETS/Studies (Misc)	Various	Various	871	346		370		Cont.		
Subtotal Support			1,647	722		1,451		0	0	
Remarks: Prior Years includes FY 97 and FY 98 data; program transferred from SPAWAR in FY 97, therefore earlier data is not available										
Next Generation T&E	Various	NAWCAD				3,091				
Subtotal Test & Evaluation			0	0		3,091		0	0	
Remarks:										
Subtotal Management			0	0		0	0	0	0	
SBIR Assessment				14						
Remarks:										
Total Cost			2,626	894		4,704		0	0	

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET DATE:

February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: CARRIER AIR TRAFFIC CONTROL

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W0993 CARRIER AIR TRAFFIC CONTROL	5,508	1,204	1,795	1,843	1,878	1,917	1,966	2,012	CONT.	CONT.
TOTAL	5,508	1,204	1,795	1,843	1,878	1,917	1,966	2,012	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: Shipboard Air Traffic Control Centers identify, marshal, and direct aircraft within 50 Nautical Miles (NM) to a ship's Automatic Carrier Landing System (ACLS) and Independent Landing Monitor (ILM). The ACLS and ILM then provide precise automatic control and verification of aircraft during their final approach and landing sequence. Due to the AN/SPN-46 radar's acquisition limitations in rain, a Moving Target Detection (MTD) capability is required. This technology is also being evaluated for use in the AN/SPN-43 search surveillance radar and in the AN/SPN-35B precision approach radar. The AN/SPN-42T is a pilot certification trainer with obsolescence problems, which will be resolved by integration of AN/SPN-46 technology. The AN/SPN-46 radar currently functions in cooperation with an active beacon on the controlled aircraft, and this beacon also has an obsolescence problem. Passive Point Source (PPS) development will replace the beacon. Performance Support Systems (PSS) tailored to specific air control systems, such as AN/SPN-43, AN/SPN-35 and AN/SPN-46, are required to improve the performance of system maintainers. PSS includes supplemental training, technical references and logistics information.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$200) Continued AN/SPN-43 MTD development.
- (U) (\$2,608) Provided systems engineering support, test & evaluation for AN/SPN-46 and AN/SPN-43 MTD.
- (U) (\$708) Continued Passive Point Source development.
- (U) (\$1,065) Continued development of AN/SPN-42T systems upgrades.
- (U) (\$927) Initiated development of AN/SPN-35 MTD capability.

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PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Carrier Air Traffic Control

2. (U) FY 1999 PLAN:

- (U) (\$210) Continue systems engineering, test & evaluation for Passive Point Source and AN/SPN-46, AN/SPN-35 and AN/SPN-43 MTD systems.
- (U) (\$200) Develop production prototype for Passive Point Source.
- (U) (\$617) Develop production prototype for AN/SPN-43 MTD.
- (U) (\$100) Initiate development of performance support system for AN/SPN-43.
- (U) (\$50) Continue development of AN/SPN-42T systems upgrades.
- (U) (\$27) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2000 PLAN:

- (U) (\$723) Continue systems engineering, test & evaluation for Passive Point Source and AN/SPN-42T upgrade.
- (U) (\$100) Complete development of AN/SPN-43 performance support system.
- (U) (\$500) Initiate prototype development for AN/SPN-42T upgrade.
- (U) (\$72) Initiate development of performance support system for AN/SPN-35.
- (U) (\$400) Initiate development of halyard protection for AN/SPN-43.

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PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Carrier Air Traffic Control

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	6,528	1,260	1,826
(U) Appropriated Value:	6,741	1,260	
(U) Adjustments from President's Budget:	-1,020	-56	-31
(U) FY 2000 President's Budget Submit:	5,508	1,204	1,795

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 decrease of \$1,020 thousand includes decreases of \$166 thousand for Small Business Innovation Research (SBIR), \$781 thousand in reprogrammings for Air Traffic Control Improvements (W1657) and MATCALs (W0718), and \$73 thousand in reprogrammings for other Navy priorities. FY 1999 decrease of \$56 thousand is the result of Congressional undistributed reductions. FY 2000 decrease of \$31 thousand reflects minor pricing adjustments.

(U) Schedule: FY 1998 funding adjustments have impacted AN/SPN-42T upgrade development schedule, delaying it by one year.

(U) Technical: Not applicable.

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DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Carrier Air Traffic Control

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>
1810 Automatic Carrier Landing System - 42PN	11,020	10,053	19,440	18,832	16,750	18,477	18,938	19,328	CONT.
1810 Shipboard Air Traffic Control - 42MP	3,605	8,552	7,543	8,095	8,360	8,415	8,625	8,802	CONT.

Related RDT&E

(U) P.E. 0603512N (Carrier Systems Development)

(U) P.E. 0604512N (Shipboard Aviation Systems)

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DATE: February 1999

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PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Carrier Air Traffic Control

(U) D. ACQUISITION STRATEGY:

All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy user requirements (all weather operation) or address supportability and cost of ownership problems.

(U) E. SCHEDULE PROFILE

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY2000</u>	<u>TO COMPLETE</u>
(U) Program Milestones			4Q SPN-43 PSS Software Release	1Q/FY01 SPN-35PSS Software Release
(U) Engineering Milestones	1Q SPN-43 MTD Prototype	4Q PPS Prototype 4Q SPN-43 MTD Production Prototype	3Q PPS Production Prototype	
(U) T&E Milestones	2Q-4Q SPN-46/43 MTD Testing 1Q-2Q PPS Testing	1Q-2Q PPS Testing 4Q SPN-35 MTD Testing 3Q-4Q SPN-43 MTD Testing	4Q PPS Testing	1Q/FY01 PPS Testing
(U) Contract Milestones		2Q SPN-46 MTD Production	2Q SPN-35 MTD Production	2Q/FY01 SPN-43 MTD Production

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W0993

PROJECT TITLE: Carrier Air Traffic Control

<u>Cost Categories:</u>	<u>Contract Method & Type</u>	<u>Performing Activity & Location</u>	<u>Total Prior Yrs Cost</u>	<u>FY 1999 Cost</u>	<u>FY 1999 Award Date</u>	<u>FY 2000 Cost</u>	<u>FY 2000 Award Date</u>	<u>Cost to Complete</u>	<u>Total Cost</u>	<u>Target Value of Contract</u>
Project Development (Misc.)	WX	NAWCAD Pax River, MD	22,104	1,013		1,525		CONT.	CONT.	
Subtotal Project Development			22,104	1,013		1,525		CONT.	CONT.	
Remarks:										
Subtotal Support										
Remarks:										
Cost categories:	WX	NAWCAD	739	80		100		CONT.	CONT.	
T&E (Misc.)		Pax River, MD								
Subtotal Test & Evaluation			739	80		100		CONT.	CONT.	
Remarks:										
Management (Misc.)	Various	NAWCAD Pax River, MD	589	84		170		CONT.	CONT.	
Subtotal Management			589	84		170		CONT.	CONT.	
SBIR Assessment				27						
Remarks:										
Total Cost			23,432	1,204		1,795		CONT.	CONT.	

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DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W1657

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Air Traffic Control Improvements

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W1657 AIR TRAFFIC CONTROL IMPROVEMENTS	1,684	1,887	2,197	2,414	2,479	2,542	2,609	2,671	CONT.	CONT.
TOTAL	1,684	1,887	2,197	2,414	2,479	2,542	2,609	2,671	CONT.	CONT.

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This program provides for engineering development, integration, adaptation, and testing of new and/or modernized real-time Air Traffic Control (ATC) systems, air navigational aids and landing systems, ATC communications systems, e.g., Fleet Area Control and Surveillance Facility (FACSFAC), and Ranges that must be modified to ensure continued interoperability with the National Airspace System (NAS). Performance Support Systems (PSS) tailored to specific air control systems, such as AN/SPN-41 and AN/TPX-42, are required to improve the performance of system maintainers. PSS includes supplemental training, technical references and logistics information.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS:

- (U) (\$570) Continued development of Global Positioning System (GPS) data link/landing system.
- (U) (\$60) Completed development of AN/SPN-41 performance support system.
- (U) (\$754) Provided systems engineering support for development of GPS data link/landing system and AN/SPN-41 performance support system.
- (U) (\$300) Initiated engineering development for NAS Modernization.

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PROJECT NUMBER: W1657

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Air Traffic Control Improvements

2. (U) FY 1999 PLAN:

- (U) (\$250) Complete development of GPS data link/landing system.
- (U) (\$507) Provide systems engineering support to complete evaluation of GPS data link/landing system.
- (U) (\$300) Initiate development of AN/TPX-42 computer upgrade.
- (U) (\$300) Continue engineering development for NAS Modernization.
- (U) (\$500) Initiate development of an Automatic Carrier Landing System (ACLS) Improvements upgrade.
- (U) (\$30) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2000 PLAN:

- (U) (\$65) Initiate development of AN/TPX-42 performance support system.
- (U) (\$200) Complete development on AN/TPX-42 computer upgrade.
- (U) (\$1,000) Continue development of ACLS Improvements upgrades.
- (U) (\$632) Provide systems engineering support for ACLS Improvements upgrade.
- (U) (\$300) Continue engineering development for NAS Modification.

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PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W1657

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Air Traffic Control Improvements

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	1,244	1,893	2,236
(U) Appropriated Value:	1,297	1,893	
(U) Adjustments from President's Budget:	+440	-6	-39
(U) FY 2000/2001 President's Budget Submit:	1,684	1,887	2,197

CHANGE SUMMARY EXPLANATION:

(U) Funding: FY 1998 increase of \$440 thousand includes: a \$461 thousand increase due to reprogrammings from Carrier ATC (W0993); a \$3 thousand decrease for Small Business Innovation Research (SBIR), and an \$18 thousand decrease for pricing adjustments. FY 1999 decrease of \$6 thousand reflects Congressional undistributed reductions. FY 2000 decrease of \$39 thousand reflects pricing adjustments.

(U) Schedule: Not applicable.

(U) Technical: Not applicable.

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PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Air Traffic Control Improvements

(U) C. OTHER PROGRAM FUNDING SUMMARY

<u>Appn</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>
1810 National Air Space System - 42CB	2,200	7,985	35,115	36,675	52,260	37,815	38,759	22,679	CONT.
1810 Shipboard Air Traffic Ctrl - 42MP	3,605	8,552	7,543	8,095	8,360	8,415	8,625	8,802	CONT.

Related RDT&E

(U) Not applicable.

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W1657

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Air Traffic Control Improvements

(U) D. ACQUISITION STRATEGY:

All projects are non-ACAT upgrades to existing systems. An evolutionary acquisition approach is being used to introduce technology advancements that either satisfy user requirements (all weather operation) or address supportability and cost of ownership problems.

(U) E. SCHEDULE PROFILE

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>TO COMPLETE</u>
(U) Program Milestones	4Q SPN-41 PSS Software Release			4Q/FY01 TPX-42 PSS Software Release
(U) Engineering Milestones	2Q GPS NAPIE Prototype		2Q TPX-42 Computer Production Prototype 3Q-4Q TPX-42 Computer Testing	
(U) T&E Milestones	3Q-4Q Evaluate GPS NAPIE Prototype	1Q-2Q Evaluate GPS NAPIE Prototype		
(U) Contract Milestones				1Q/FY01 TPX-42 Computer Production

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

Date: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W1657

PROJECT TITLE: Air Traffic Control Improvements

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete CONT>	Total Cost CONT>	Target Value of Contract
Project Development (Misc.)	WX	NAWCAD	33,861	1,502		1,827				
		Pax river Md								
		SPAWAR		180		60				
		San Diego, CA								
Subtotal Project Development			33,861	1,682		1,887		CONT.	CONT.	
Remarks:										
Subtotal Support										
Remarks:										
T & E (Misc.)	WX	NAWCAD	2,138	100		120		CONT.	CONT.	
		Pax River, MD								
Subtotal Test & Evaluation			2,138	100		120		CONT.	CONT.	
Remarks:										
Management Support (Misc.)	Various	NAWCAD	2,633	75		190		CONT.	CONT.	
		Pax River, MD								
Subtotal Management			2,633	75		190		CONT.	CONT.	
SBIR				30						
Remarks:										
Total Cost			38,632	1,887		2,197		CONT.	CONT.	

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N
PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT NUMBER: W2643
PROJECT TITLE: Expeditionary
Common Automatic
Recovery System
(ECARS)

ECARS

(U) COST: (Dollars in Thousands)

<u>Project Number & Title</u>	<u>FY 1998 Budget</u>	<u>FY 1999 Budget</u>	<u>FY 2000 Estimate</u>	<u>FY 2001 Estimate</u>	<u>FY 2002 Estimate</u>	<u>FY 2003 Estimate</u>	<u>FY 2004 Estimate</u>	<u>FY 2005 Estimate</u>	<u>To Complete</u>	<u>Total Program</u>
W2643 ECARS	0	3,492	0	0	0	0	0	0	0	0
TOTAL	0	3,492	0	0	0	0	0	0	0	0

Quantity of RDT&E Articles

(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: The USMC's Marine Air Ground Force (MAGTF) requires the capability to recover Aviation Combat Element (ACE) aircraft and Unmanned Aerial Vehicles (UAVs) reliably in an expeditionary environment. The current landing aid systems are antiquated, require considerable lift and setup time, and are primarily fixed base systems. The objectives of the Expeditionary Common Automatic Recovery System (ECARS) specifically include the development of a landing systems beacon replacement for both manned and unmanned aircraft.

(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

1. (U) FY 1998 ACCOMPLISHMENTS: Not applicable

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N
PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT NUMBER: W2643
**PROJECT TITLE: Expeditionary
Common Automatic
Recovery System
(ECARS)**

2. (U) FY 1999 PLAN:

- (U) (\$1,090) Continue systems engineering, test and evaluation of ECARS.
- (U) (\$ 500) Develop a prototype landing system beacon for manned/unmanned aircraft.
- (U) (\$1,815) Develop system upgrades for extended range capability.
- (U) (\$87) Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

3. (U) FY 2000 PLAN: Not applicable

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N
PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT NUMBER: W2643
PROJECT TITLE: Expeditionary Common
Automatic Recovery
System (ECARS)

(U) B. PROGRAM CHANGE SUMMARY

	<u>FY 1998</u>	<u>FY 1999</u>	<u>FY 2000</u>
(U) FY 1999 President's Budget:	0	0	0
(U) Appropriated Value:	0	3,500	0
(U) Adjustments from President's Budget:	0	+3,492	
(U) FY 2000 President's Budget Submit:	0	3,492	0

CHANGE SUMMARY EXPLANATION:

- (U) Funding: FY 1999 increase of \$3,492 includes an increase of \$3,500 and an \$8 thousand decrease for a minor pricing adjustment.
- (U) Schedule: Not applicable.
- (U) Technical: Not applicable.

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N
PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT NUMBER: W2643
**PROJECT TITLE: : Expeditionary Common
Automatic Recovery
System (ECARS)**

(U) C. OTHER PROGRAM FUNDING SUMMARY: Not applicable

(Related RDT&E

(U) P.E. 0603860F (JPALS)

(U) P.E. 0603860N (JPALS)

(U) P.E. 0603640M (Marine Corps Advanced Technology Demonstrations)

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EXHIBIT R-2a, FY 2000 RDT&E,N BUDGET PROJECT JUSTIFICATION SHEET

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W2643

PROGRAM ELEMENT TITLE: AIR CONTROL (Eng.)

PROJECT TITLE: Expeditionary Common
Automatic Recovery
System (ECARS)

(U) D. ACQUISITION STRATEGY: Purpose of project is to develop capability demonstrations. Acquisition approach will direct efforts toward providing useful avionics off-the-shelf alternatives.

(U) E. SCHEDULE PROFILE

TO

FY 1998

FY 1999

FY 2000

COMPLETE

(U) Program Milestones

(U) Engineering Milestones

(U) T&E Milestones

(U) Contract Milestones

3Q Contract Award

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EXHIBIT R-3, FY 2000 RDT&E,N COST ANALYSIS

DATE: February 1999

BUDGET ACTIVITY: 5

PROGRAM ELEMENT: 0604504N

PROJECT NUMBER: W2643

PROJECT TITLE: Expeditionary Common Automatic Recovery System (ECARS)

Cost Categories:	Contract Method & Type	Performing Activity & Location	Total Prior Yrs Cost	FY 1999 Cost	FY 1999 Award Date	FY 2000 Cost	FY 2000 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Project Development (Misc.)	BOA	NAVAIR Pax River, MD		2,855						
Subtotal Project Development				2,855						
Remarks:										
Subtotal Support										
Remarks:										
Test & Evaluation (Misc.)				300						
Subtotal Test & Evaluation				300						
Remarks:										
Management Support (Misc.)				250						
Subtotal Management				250						
SBIR ASSESSMENT				87						
Remarks										
Total Cost				3492						

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